



WELDING

POLICY GUIDE





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PROGRAM DESCRIPTION

Welding prepares students to apply technical knowledge and skills in stick, mig, tig, and flux core welding as well as flame cutting and CNC and hand plasma cutting. Students learn safety practices and types and uses of electrodes; properties of metals; blueprint reading; electrical principles; welding symbols and mechanical drawing; use of equipment for testing welds and destruction; use of manuals and specification charts; use of portable grinders; positioning and clamping; and welding standards established by the American Welding Society.

CORE CURRICULUM

- Flux Core Arc Welding
- Gas Metal Arc Welding
- Gas Tungsten Arc Welding
- Oxyfuel Cutting
- Principles of Welding
- Shielded Metal Arc Welding
- Welding Math & Blueprint Reading

Industry Certifications:

- AWS Qualification
- OSHA 10 General Safety

Pennsylvania Skills Certificate/College Credit:

Students who successfully complete their program of study have the opportunity to earn college credits to post-secondary institutions where we have current articulation agreements. Students who meet a 70% benchmark on the written portion of the NOCTI end-of-program assessment, may also earn 3 credits at over 60 colleges and universities in Pennsylvania.



A sample listing of post-secondary articulation agreements include: Butler County Community College, Laurel Technical Institute, Pittsburgh Technical College and Precision Manufacturing Institute. For more information about articulation agreements and college credit, please see the MCCC Guidance Counselor.

Graduates that complete the program are equipped with the knowledge, understanding and the skills essential for entry-level employment in the following:

- Fabrication Welder
- Fitter Welder
- Maintenance Welder

Mercer County Career Center does not discriminate on the basis of age, race, color, national or ethnic origin, sex, or disability in employment or in the administration of any of its education programs and activities in accordance with applicable federal statutes and regulations. Inquiries should be directed to Title IX and Section 504 Coordinator, Aaron Kline, Mercer County Career Center, 776 Greenville Road, Mercer, Pennsylvania, 16137. 724-662-3000.

WELCOME

PROGRAM OUTLINE

- | | |
|--|--|
| A Orientation & Safety | H Shop Math & Print Reading II |
| B Shop Math & Print Reading I | I Manual Plasma Arc Cutting (PAC) |
| C Principles of Welding | J Flux Cored Arc Welding (FCAW) I |
| D Oxyfuel Welding (OFW) | K Gas Metal Arc Welding (GMAW) |
| E Manual & Mechanized Oxyfuel Gas Cutting (OFC) | L Gas Tungsten Arc Welding (GTAW) |
| F Weld Inspecting & Testing | M Manual Air Carbon Arc Cutting (CAC-A) |
| G Shielded Metal Arc Welding (SMAW)
Carbon & Stainless Steel | N Career Seeking Skills |

PROPOSED 9 WEEK UNIT PLANS

	1ST 9 WEEKS	2ND 9 WEEKS	3RD 9 WEEKS	4TH 9 WEEKS
YEAR 1	100 Orientation & Safety 200 Principles of Welding 300 Welding, Drawing, and Weld Symbol Interpretation 500 Shield Metal Arc Welding (SMAW) 900 Manual Oxy Fuel Gas Cutting (OFC) 1000 Mechanized Oxyfuel Gas Cutting (OFC)	300 Welding, Drawing, and Weld Symbol Interpretation 400 Visual Examination, Inspection, and Testing 500 Shield Metal Arc Welding (SMAW) 900 Manual Oxy Fuel Gas Cutting (OFC) 1000 Mechanized Oxyfuel Gas Cutting (OFC)	300 Welding, Drawing, and Weld Symbol Interpretation 400 Visual Examination, Inspection, and Testing 500 Shield Metal Arc Welding (SMAW) 900 Manual Oxy Fuel Gas Cutting (OFC) 1000 Mechanized Oxyfuel Gas Cutting (OFC)	300 Welding, Drawing, and Weld Symbol Interpretation 400 Visual Examination, Inspection, and Testing 500 Shield Metal Arc Welding (SMAW) 900 Manual Oxy Fuel Gas Cutting (OFC) 1000 Mechanized Oxyfuel Gas Cutting (OFC)
YEAR 2	100 Orientation & Safety 300 Welding, Drawing, and Weld Symbol Interpretation 600 Gas Metal Arc Welding (GMAW) 700 Flux Cored Arc Welding (FCAW) 1100 Manual Plasma Arc Cutting (PAC)	300 Welding, Drawing, and Weld Symbol Interpretation 600 Gas Metal Arc Welding (GMAW) 700 Flux Cored Arc Welding (FCAW) 1100 Manual Plasma Arc Cutting (PAC)	300 Welding, Drawing, and Weld Symbol Interpretation 600 Gas Metal Arc Welding (GMAW) 700 Flux Cored Arc Welding (FCAW) 800 Gas Tungsten Arc Welding (GTAW) 1200 Manual Air Carbon Arc Cutting (CAC-A)	300 Welding, Drawing, and Weld Symbol Interpretation 600 Gas Metal Arc Welding (GMAW) 700 Flux Cored Arc Welding (FCAW) 800 Gas Tungsten Arc Welding (GTAW) 1200 Manual Air Carbon Arc Cutting (CAC-A)
YEAR 3	700-Flux Cored Arc Welding (FCAW II) Metal Fabrication Career Seeking Skills	700-Flux Cored Arc Welding (FCAW II) Metal Fabrication Career Seeking Skills	500/800 - Pipe Welding Metal Fabrication Career Seeking Skills	500/800 - Pipe Welding Metal Fabrication Career Seeking Skills



WELDING – ESSENTIAL SKILLS

CLASSROOM TESTS

Industry certification style chapter tests, multiple choice tests, and written tests.

Year 1 – 20 tests*

Year 2 – 25 tests*

Year 3 – 5 and as needed*

*This number is approximate and is subject to change

LECTURE TIME

Year 1 – 3 hours/week*

Year 2 – 3 hours/week*

Year 3 – 1-3 hours/week*

*This number is approximate and is subject to change

ACADEMIC SKILLS

Grade Level Appropriate Reading

Math Skills:

- Fractions/decimals (add, subtract, multiply, divide)
- Order of operations
- Pythagorean Theorem*
- Special triangles
- Application of Trigonometry/Inverse Trigonometry angles
- Formulas
- Conversion of Linear measurement to US Customary to metric and vice versa

SOFT SKILLS

- Listening
- Reasoning (inductive/deductive)
- Human relations
- Able to work with others
- Critical thinking
- Attendance
- Punctual

COMPUTER SKILLS

- Basic computer skills

PHYSICAL REQUIREMENTS

- Lift 60 pounds
- Tolerate extreme temperature
- No fear of heights
- Hand-eye-foot coordination
- Manual dexterity
- Tolerate loud noise levels
- Work in confined spaces

VOCATIONAL TESTING

- Structural mechanical visualization/reasoning
- Discrimination by size/shape
- Gross/fine motor skills
- Manual dexterity
- Retention of mechanical and structural detail

Essential Aptitudes for lab recommended levels

MCCC POLICIES

GRADING POLICY

Grading will be broken into three categories.

Theory Grade:

- Worksheets
- Quizzes
- Tests

Lab Grade:

- Projects
- Competencies
- Competency Attempts

STRIVE Grade: (Each letter is assigned 1 point per day)

S

SAFETY

Wear safety glasses
Follow dress regulations
Operate equipment appropriately

T

TEAMWORK

Completes assigned job
Correctly cares for tools & equipment
Keeps shop and work area clean

R

RESPECT

Respects others
Uses proper language
Uses technology correctly

I

INSPIRED

On-Time
Dressed
Cell Phone is put away

V

VISION

Positive Attitude
On-Task
Obeyes class and school rules
Obeyes safety guidelines

E

EXCELLENCE

Completes work on time
Do your best work possible
Meet benchmarks

GRADE REPORTING

A student grade report will be given to a student whose grade drops below 70%.

A parent/guardian will receive notification if a student's grade drops below 70%. (Phone call, Grade Report Sent Home)

A referral to the Student Support Team will be made if a student's grade drops below 70%.

REPORT CARDS

Grades are reported to the home schools at the end of MCCC's quarters. Home schools report the MCCC program grade on their report card. MCCC does not issue a report card.

PASSING AND CREDIT

Students must follow their home school's grading scale to ensure they receive credit. MCCC does not issue credit towards student graduation. Credit is issued by the home school.

MCCC PASSING

To stay enrolled in a MCCC program and to earn a MCCC Certificate, MCCC recognizes 65% as passing.

MAKE-UP WORK

IF A STUDENT IS ABSENT AN EXCUSE MUST BE GIVEN TO THE OFFICE WITHIN 3 DAYS OF YOUR RETURN TO SCHOOL (Please see the Student Handbook for attendance policies). If a student is absent he/she will receive a "0" for a STRIVE grade. The procedures for making up work include:

- Upon return to school it is the students' responsibility to ask the instructor for make-up work. This is to be done between 8:00 a.m. and 8:45 a.m. or 12:00 p.m. and 12:45 p.m.
- The student must complete the assignment and hand it in to the instructor on or before the due date. The student is allowed 1 day to make up assignments.
- The student will then be given credit for the assignment. Unexcused absences cannot be made up.
- Student has to complete make up assignment to obtain daily points for day(s) missed.



GRADE SCALE

Mercer County Career Center only issues a percentage grade to the home school.

%	GPA	%	GPA	%	GPA	%	GPA	%	GPA
100	4.0	80	2.3	60	0.3	40	0.0	20	0.0
99	4.0	79	2.2	59	0.2	39	0.0	19	0.0
98	3.9	78	2.1	58	0.1	38	0.0	18	0.0
97	3.9	77	2.0	57	0.0	37	0.0	17	0.0
96	3.8	76	1.9	56	0.0	36	0.0	16	0.0
95	3.8	75	1.8	55	0.0	35	0.0	15	0.0
94	3.7	74	1.7	54	0.0	34	0.0	14	0.0
93	3.6	73	1.6	53	0.0	33	0.0	13	0.0
92	3.5	72	1.5	52	0.0	32	0.0	12	0.0
91	3.4	71	1.4	51	0.0	31	0.0	11	0.0
90	3.3	70	1.3	50	0.0	30	0.0	10	0.0
89	3.2	69	1.2	49	0.0	29	0.0	9	0.0
88	3.1	68	1.1	48	0.0	28	0.0	8	0.0
87	3.0	67	1.0	47	0.0	27	0.0	7	0.0
86	2.9	66	0.9	46	0.0	26	0.0	6	0.0
85	2.8	65	0.8	45	0.0	25	0.0	5	0.0
84	2.7	64	0.7	44	0.0	24	0.0	4	0.0
83	2.6	63	0.6	43	0.0	23	0.0	3	0.0
82	2.5	62	0.5	42	0.0	22	0.0	2	0.0
81	2.4	61	0.4	41	0.0	21	0.0	1	0.0

“OUR MISSION IS TO EQUIP STUDENTS WITH MARKETABLE SKILLS THROUGH EFFECTIVE CAREER AND TECHNICAL EDUCATION”



National Technical Honor Society



MCCC POLICIES

DAILY HOUSEKEEPING

To fulfill Welding requirements, students will be assigned a daily housekeeping job. The student will be responsible for completing their duties correctly. Their performance will be evaluated as a weekly STRIVE grade as well as overall task completion credit.

FOLLOWING INSTRUCTIONS

Throughout the semester students will receive various verbal and written instructions. To fulfill Welding requirements the student will be evaluated on their ability to follow these instructions. This will be graded as part of their STRIVE grade.

STUDENT OF THE SEMESTER

The criterion for selecting the “Student of the Semester” is as follows:

- Attendance
- Attitude
- Grades
- Work Ethic
- STRIVE

STANDARDS OF DRESS

As a SAFETY REQUIREMENT, proper clothing is required in order to participate in shop activities. If a student forgets his/her proper clothing or if the clothing possesses a safety hazard they will receive a “0” for the day as part of his/her STRIVE grade. The student will additionally be given an alternative assignment. The student will not be allowed to return to the shop until the assignment is complete to the satisfaction of the instructor.

Proper clothing consists of steel toe boots, their uniform, and safety glasses. Students who wear unacceptable clothing will be given a “0” as part of their STRIVE grade for the day.

UNIFORMS AND CLOTHING REQUIREMENTS

- Safety Toe Boots
- Cintas will be fitting and providing students with uniforms needed within the first month of school. Uniforms will be laundered on a weekly basis through Cintas.
- The first pair of safety glasses is provided to the student free of charge. Additional pairs of safety glasses must be purchased for \$2.00 per pair and are sold within our school store.

SCHOOL LOCKERS

School lockers are the property of the school and not the student. Students shall have no expectation of privacy in their lockers. Lockers should be locked at all times. All students will be issued a school lock for use at the Career Center, locks are to be returned at the end of the school year. The instructor will be given a master key that will open all student locks. This system will provide access to lockers in an emergency situation quickly and easily without having to cut the lock and incur cost to the student. Students shall assume responsibility for maintaining the security of their lockers. The Mercer County Career Center is not responsible for the personal property of pupils. At the conclusion of the school year students should clean out their locker completely. Any remaining items will be discarded.

Lockers are the property of the school and remain under the direct control of the Mercer County Career Center at all times. In order to maintain a safe and healthy educational environment, lockers may be subject to search by school personnel without student permission at any time the Principal or Safety Coordinator has reasonable suspicion to believe that anything stored in the locker may be a threat to the health, safety, and welfare of other students or school personnel. The Mercer County Career Center reserves the right to enlist the services of trained dogs to search for drugs or weapons anywhere on school property including the parking lots and adjacent outdoor areas.



CELL PHONES/HEADPHONES

Cell phones are NOT permitted in the classroom or the shop area. They must be kept locked in lockers until dismissal.

1st Offense – Referral to the Office

FOOD AND DRINKS

As per the school policy, food and drinks will only be allowed in the classroom. There will be no food or drinks allowed in the shop area.

SAFETY RULES AND REGULATIONS

Safety is a vital part of our educational programs. Safety regulations are strictly enforced in all areas of the school. To ensure the safety of every student, all students are required to successfully complete a safety program. Students are not permitted to work in their technical program without an Emergency Card on file. It is imperative that students realize these rules are to protect them and their classmates. Safety must be taken very seriously.

- All students must arrive on time and be prepared to work. A written excuse must be presented for all cases of tardiness and absenteeism.
- Everyone must wear appropriate shoes (heavy leather, steel toed, or metatarsal).
- Tennis shoes/sneakers, flip flops are NOT permitted to be worn in the shop area.
- All students must wear approved safety glasses at all times in the shop area.
- All work clothing shall NOT have any holes, tears, or defects that the Instructor would believe to be unsafe.
- All bags are to be left in your assigned locker. (back packs, purses, etc.)
- No horseplay of any kind is permitted. No running in the shop, no throwing of any object, no touching of each other, etc.
- No one is permitted out of the Welding shop area without the Instructor's permission.
- No radios, CD /MPs, headphones, electronic games, or any other electronic entertainment device is permitted in the shop area at any time.

- No student shall lie or sit on any bench or desk at any time.
- Every student will clean-up their work area at the end of each session. The clean-up task must be completed to the Instructor's satisfaction.
- No one is permitted to use a tool or operate a piece of equipment unless he/she has received safety instructions and has permission from the Instructor.
- Sunglasses are NOT permitted to be worn in the shop area during class time.
- It is the student's responsibility to complete all assignments and turn them in to the Instructor when due. This includes all shop and classroom assignments.
- Cell phones are NOT permitted for any reason.
- All students will participate in classroom assignments and shop assignments.
- Every student will use proper language. (No Swearing)
- No food or drinks are permitted in the Welding shop area.

STUDENT EXPECTATIONS

Students who participate in the Welding Program at the Mercer County Career Center are expected to:

- Participate as a team member
- Work independently
- Demonstrate punctuality
- Demonstrate personal hygiene and grooming
- Show respect for property and others
- Follow all safety rules
- Demonstrate effective oral communication
- Adhere to attendance guidelines
- Demonstrate leadership qualities
- Display a positive work attitude
- Perform housekeeping duties daily

PARENT CONTACT INFORMATION

Parent/Guardian/Student: Please read the following policies. These cover what each student is responsible for to complete the Welding program. Please complete and sign **both front and back** and return this page to verify that you have read, understand and agree to abide by these policies. Please keep the rest of the pages, they are for your reference.

If you have any questions, please contact Mr. Gilhousen at 724-662-3000 ext. 1122 or ggilhousen@mercercoc.org.

Parent/Guardian Signature: _____

Parent/Guardian Print Name: _____

Contact Phone Number: _____

Contact Email: _____

Student Signature: _____

Student Print Name: _____



WELDING STUDENT CONTRACT

As I prepare for a career in the Welding field I realize rules, policies and specific procedures must be followed to ensure a safe and productive environment.

I have read and understand all shop policies. I understand any infractions will result in immediate reprimand, such as a verbal warning, loss of STRIVE points, writing assignment, office referral, a call home or in severe cases removal from the Welding program.

I also understand to succeed in a rewarding Welding career I must meet specific classroom expectations, this includes: being respectful to others, completing all of the required assignments on my own and participating in class discussions.

I further understand that my actions may affect future job recommendations in the Welding field.

YES

I can follow all procedures and rules and meet all expectations and will remain in the Welding program.

Student Signature: _____ Date: _____

Parent/Guardian Signature: _____ Date: _____

NO

I realize this class demands a high level of maturity and hard work. I would like to be removed from the Welding program.

Student Signature: _____ Date: _____

Parent/Guardian Signature: _____ Date: _____

